R-4-I-4
Ms R-4-E-2

EC no pictures in file 6/24

UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

Project | Date | Author

TITLE

Idaho
N.F.

MEMORANDUM RE: Salmon River Infestations

by
T. T. Terrell
Scientific Aide

Co

Forest Insect Laboratory
Coeur d'Alene, Idaho
April 29, 1939

U. S. GOVERNMENT PRINTING OFFICE 8—9742

LIBRARY FILE

SUBJECT—

INDEX NO.—

Coeur d'Alene, Idaho
April 29, 1939

MEMORANDUM RE: Salmon River Infestations

An extensive examination of the ponderosa pine stands along the main Salmon River and the Little Salmon above Riggins, Idaho was made by the writer during the week of April 17 to 22, to determine the extent and seriousness of an infestation of the western pine beetle. During the first three days of this examination, the writer was assisted by Ranger Powers of the New Meadows district of the Idaho National Forest. Mr. Philips, Supervisor of the Nezperce Forest, was present during the first day when a general reconnaissance of infested areas was made.

The infestation was found to be largely confined to an area approximately twelve miles in length along the Salmon River between the Lake Creek-Warm Springs creek ridge and Carey creek, as shown on the map attached to this report. The general topography of this area is composed of very steep grassy hills with numerous rock outcroppings rising abruptly from the river to an average height of four thousand feet. Sparsely stocked pine stands occur along the river, but towards the ridge tops where the slope is less severe, there are more heavily stocked stands. Douglas fir predominates at slightly higher elevations and on some of the lower northern slopes. All timber stands are interspersed with large open areas of grass land and barren rocky ridges.

The western pine beetle infestation within this area is rather well concentrated in a few drainages. In these areas there is also an infestation of flathead borers, probably Melanophila sp., working in conjunction with the western pine beetle. A comparison of yearly losses indicates that these infestations reached their peak of destruction in 1936 and 1937 and have decreased in severity since that time. The greatest loss occurred in the French Creek drainage where 20 to 75 percent of the ponderosa pine has been killed, largely by the western pine beetle. The infested area is about 1800 acres in extent and it is estimated that there are about 200 trees with overwintering brood.

In the Elkhorn Creek drainage there has been a rather severe loss of pine on an area of about 1200 acres with the flathead borers being primarily responsible. While only a few (5) trees were found that contained western pine beetle brood, flathead larvae were found in a number (15) of trees, with both insects sometimes found in the same tree. On the western side of the drainage Douglas fir trees have been killed by borers. In 1931 there was a light burn near the mouth of Elkhorn Creek which, while not severe enough to kill many of the trees, may have weakened them enough to permit a building up of the infestation in this drainage.

The Partridge Creek drainage, although not examined because of its inaccessibility, was viewed from a distance, and it is believed to have an infestation similar to Elkhorn Creek although not as large in extent.

On a rather low, flat-topped ridge between Partridge Creek and Warm Springs Creek there is a good stand of mature pine in which several large groups of old kill and three groups of infested trees were seen. Several years have elapsed between the date of the old kill and the present infestation. The three groups of 1938 infestation contained a total of eleven trees, all of which had been heavily barked by woodpeckers. Between this ridge top and the Salmon River there is an area of about one-half section where a young stand of ponderosa pine was almost entirely killed by flathead borers during 1937. The trees averaged about eight inches in diameter and the area was rather heavily stocked.

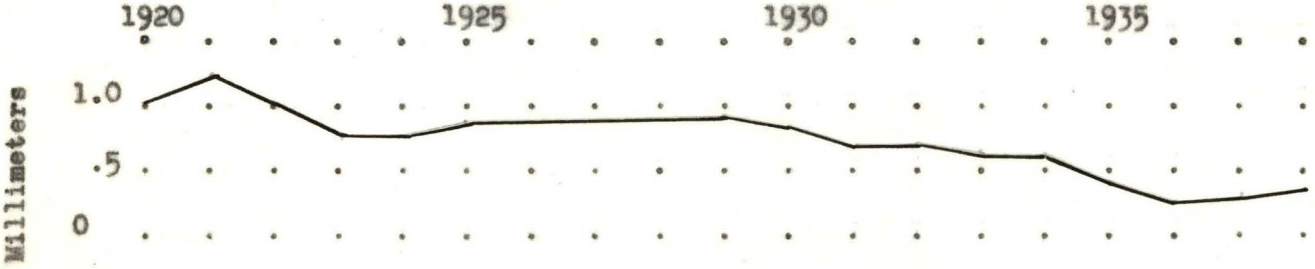
A relatively small area on the ridge west of Warm Springs Creek had a number of red tops that were believed to have been killed by western pine beetle.

Examinations were made in Lake Creek and Shorts Creek further down on the main Salmon and in Denny Creek and Elk Creek on the Little Salmon, with only a very few red-topped trees and no trees with brood being recorded. Examinations were also made up the Salmon River above French Creek but the pine stands were found to be very narrow and scattering for several miles up the river. A number of red-topped trees were seen along the ridges on both sides of the river where they occurred singly or in occasional instances in groups of two and three trees.

In the examination of some of the infested trees many perplexing conditions were found that were difficult to account for. Several trees with green foliage were examined which contained brood of the western pine beetle. In fact brood was found in trees ranging from red to green. There was also a wide range in brood conditions--from emerging new adults to larvae within the same groups. It is felt that due to a very wide range in climate, because of the rapid change in elevation, there could have been from one to two and a half generations within a very small area. Such a condition may account for the diversities in foliage conditions and in brood development. A partial third generation may have started to develop late in the fall which would permit the late attacked trees to remain green all winter. Because of a wide range in climatic conditions there may have been brood emergence from some parts of the area from May until October.

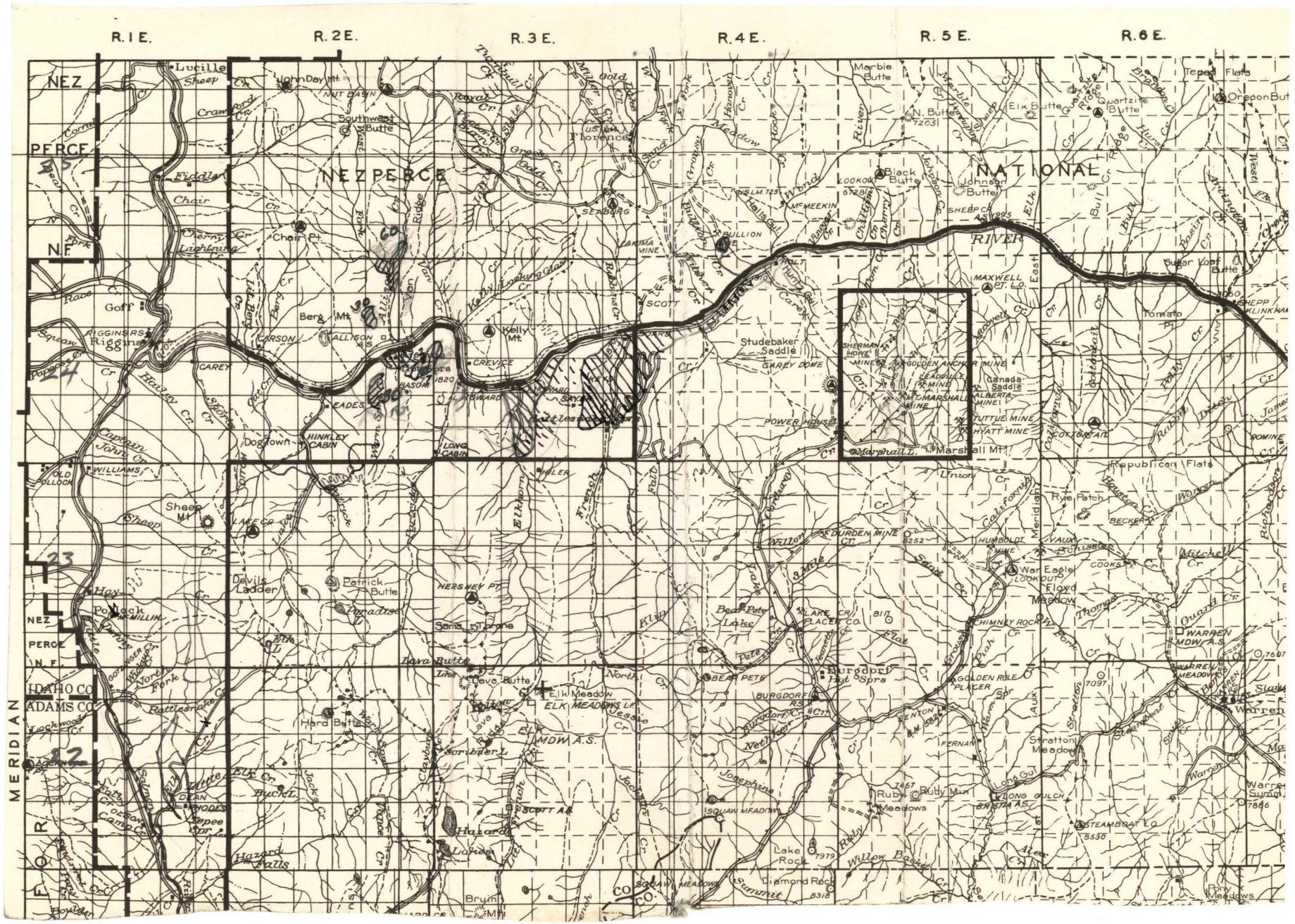
It is felt that the timber growing in the areas examined is existing under a condition very close to the minimum of requirement for ponderosa pine. A slight drop in annual rainfall over a period of a few years, under such a condition, would probably lower the trees' resistance to a considerable extent. Weather records have not as yet been secured from the vicinity of the infestation but according to information secured from local inhabitants and forestry officials, the past few years are reported to have been noticeably drier than usual.

Several increment cores showing annual growth for the past 19 years indicate a period of decreasing growth, possibly resulting from drought, which reached its lowest point in 1936. The following graph shows the average annual growth from 9 green ponderosa pine in the Elkhorn and French Creek areas.



From the above curve, it is apparent that some factor has had a serious effect on the tree growth beginning about 1930. The fact that the infestation apparently reached its peak in 1936 and 1937 seems to correlate closely with the growth rate. The slight up trend in growth during the past year may indicate greater tree resistance and account for the apparent decrease in infested trees.

T. T. TERRELL
Scientific Aide


R. 1 E.
R. 2 E.
R. 3 E.
R. 4 E.
R. 5 E.
R. 6 E.
NEZ PERCE N.F.
NEZ PERCE
NATIONAL
RIVER
MERIDIAN
IDAHO CO
ADAMS CO
Lucille
John Day Mt.
Southwest Butte
Florence
Marble Butte
N. Butte
Elk Butte
Quartzite Butte
Tepee Flats
Oregon Butt
Black Butte
Johnson Butte
Chair Pt.
Goff
Riggins
Berg Mt.
Kelly Mt.
Seabird
Bullion
Scott
Maxwell Pt. Lo.
Sugar Loaf Butte
Tomato Pt.
Studebaker Saddle
Grey Dome
Ganada Saddle
Marshall Mt.
Marshall L.
Power House
Dogtown
Hinkley Cabin
Lowe Cabin
Williams
Old Pollock
Sheep Mt.
Lake Co.
Devils Ladder
Patrick Butte
Paradise L.
Pollock Mill
Hersey Pt.
Sams Throne
Lava Butte
Elk Meadows
Elk Meadows L.F.
Hard Butte
Scribner L.
Hazard
Hazard Falls
Lovers
Bryan Mt.
Squaw Meadows
Diamond Rock
Lake Rock
Ruby Mtn.
Ruby Meadows
Steamboat Lo.
Republican Flats
Rye Patch
Becker
Vaux
Humboldt Mine
War Eagle Lookout
Flowd Meadow
Chimney Rock
Burgdorf Hot Spgs.
Golden Rule Placer
Bear Pete
Bear Pete Lake
Lake Cr. Placer Co.
Fernan
Stratton Meadow
Warren
Warren Summit
Warren Meadows
Dry Meadows
Long Gulch
Josephine
Squaw Meadow
Golden Anchor Mine
Headville Mine
Mt. Marshall Mine
Alberta Mine
Tuttle Mine
Hyatt Mine
Sherman Boise Mine
Durden Mine
Cook's Ck.
Mitchell Cr.
Warren Meadows L.F.
Warren M.D.W.F.A.S.
Elk Meadows M.D.W.F.A.S.
Long Gulch M.D.W.F.A.S.
Squaw Meadow M.D.W.F.A.S.
Scott A.R.
Rhodes
Tepee Spr.
Agency Spr.
Lookout 6728
Lookout 6203
Lookout 7097
Lookout 8536
Lookout 7467
Lookout 8318
Lookout 7979
Lookout 7886
Lookout 7607
Lookout 8252
Lookout 8170
Lookout 8176
Lookout 7380
Lookout 7995
Lookout 7725
Lookout 8250
Lookout 8170